

North Carolina's Northeast Alliance for Agricultural Biotechnology (NC-NAAB)

Proposed

Vision Plan for the Vernon G. James Research, Extension, and Commercialization Center

(revised 11/3/08)



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NC-NAAB vision for VJRCC

Purpose

Establish the Vernon G. James Research and Commercialization Center as a center for agricultural biotechnology translational research and commercialization and create a framework for collaboration of NCSU, ECU, ECSU and other university scientists. Formalize this by creating the Translational Agricultural Biotechnology Research Institute (TABRI) to attract interest from researchers and companies from around the world interested in testing the commercial viability of newly created field crops.

Introduction

The Vernon G. James Research and Commercialization Center (VJRCC) is a unique asset in North Carolina's Northeast region, and one that is valued as an anchor for agricultural biotechnology. With help from the VJRCC, we now have highly technological farming within the region, and our farmland produces consistently high yields with ever-increasing efficiency.

Because NC-NAAB values the VJRCC as a critical hub for the development of the agricultural biotechnology economy of North Carolina's Northeast, we wish to list here a vision of the future for the VJRCC. We also wish to request that the VJRCC continue to expand and reach its fullest potential as a center of research and extension for North Carolina's Northeast region. Many of these ideas are a result of a study recently completed by RTI International in which agricultural biotechnology was identified to be an important rural development strategy for Northeastern North Carolina. The complete study can be accessed at http://www.ncnortheast.info/Resources/Publications_Etc.htm

We see the future of the VJRCC as comparable to the Centennial Campus at NCSU where the research of the public institution coincides with the work of the private entrepreneur. With the addition of private development space, the VJRCC can become a focal point for translational science for agricultural biotechnology. We see the future of the VJRCC including education and certification for agricultural biotechnology and as a focal point for collaboration among the regional universities.

We also see the VJRCC as a complement to Centennial Campus in that the applied field research done here will enhance the biotech research being done at NCSU. The VJRCC is critical to the commercialization of biotech crops and functional foods to be patented at research campuses like Centennial Campus and the NC Research Center in Kannapolis. The proposed addition of staff, equipment, and facilities is vital to the future of the VJRCC as well as for the future of plant biotechnology in North Carolina's Northeast Region.

Plant Biotechnology – An economic future for North Carolina's Northeast

Eastern North Carolina has the land and technical resources to create a working opportunity for commercialization of plant made products. The current network of university research, agri-business, agriculture, and business development resources serves to foster plant made development, remain on the cutting edge of plant made technology, and establish a new economic niche for North Carolina's Northeast Region.

Vernon G. James Research and Commercialization Center Vision Plan

Phase I: Additional Staff & Budget

We request a minimum of five additional staff at the VJRCC to include:

- **Plant Pathologist** – expertise in the diseases of major agronomic and horticultural crops
- **Crop and Weed Scientist** – research into new crops with an emphasis on weed control
- **Economist/Marketing Specialist** – agricultural economist specializing in developing marketing opportunities for biofuel or biopharmaceutical crops
- **Administrator** – liaison with NCSU campus, long-term planning, website design
- **Biotechnology Specialist** – work with biotech companies to develop field and extraction procedures

In addition to the above, we also foresee the need for the following:

- **Genomics or Microbiology** – identify plant proteins and crop development
- **Aquaculture Specialist** – develop aquaculture in the region
- **Consumer Specialist** – education and research on biotechnology products



Budget

We encourage NCSU to afford the VJRCC its own budget rather than continue to use various line items from various departments. This would allow for better long-term planning at the center and more stability for staff positions.

Phase II: Additional Equipment, Lab, Greenhouse Space, and Expansion of Services

The VJRCC has historically held a prominent role in the services of field crop research and support. As the VJRCC grows and expands, we want to maintain this important presence within the region, and incorporate additional functions to enhance the future of agricultural biotechnology.

- **BQMS** – VJRCC would be the center for standards, training, and certification for Biotechnology Quality Management Systems. Companies using the model established by the VJRCC and approved by the US Department of Agriculture, would be certified as following the best practices in biotechnology processing. This program will demonstrate to the public the safety of growing biotech crops.
- **Pilot-Scale Extraction Facility** – Plant extraction companies will be attracted to a location that has a working facility, and this will be larger than the bench-scale extractors available at research universities. Also, with Avoca in Merry Hill, NC, we have access to their botanical extraction expertise to assist with operating the facility. Private companies would use the facility at a subsidized cost, and the facility and the VJRCC would serve as a business incubator for extraction companies. The pilot-scale extraction facility will allow scientists to measure which plant varieties produce the highest yield at the lowest cost.
- **Private Partnerships** – we envision the VJRCC expanding to include privately-owned land and greenhouses adjacent to the current property. This would accommodate private research, allow more space for test plots, and provide flexibility for broad research related to agricultural biotechnology. A 501(c)3 will be established to allow an independent non-profit entity to manage funding and longevity for the commercialization center.

Phase III: Additional Acreage for Commercialization Campus and Crop Expansion

Purchase land adjacent to the VJRCC for future growth of the commercialization campus and for expansion of the applied field crop research.

Phase IV: Public-Private Development on the New Commercialization Campus

This proposed new commercialization campus will encompass additional privately-owned labs, incubation space, dormitories, GMO warehouses, as well as processing and packaging facilities.

- **Commercialization Research Labs**
As plant biotechnology companies learn that the VJRCC is a center for applied research in biotechnology, those companies will seek out the added lab space for commercialization of their new products.
- **Incubator Space**
Because of the resources and staff available at the VJRCC, the center can expand its services as a business incubator. Ventria Biosciences used the VJRCC as an incubator during the first stages of its North Carolina Development. This type of partnership can be advertised and expanded for other plant biotechnology companies.
- **Dormitories**
A residential facility would provide onsite housing for visiting researchers and students. The nearest hotels are in Plymouth and Edenton, and the year-round 4-H conference facility is booked during the summer months and therefore not accessible during certain times. ECU and ECSU researchers have expressed the need for research internships for their students. Dormitories at the VJRCC would provide easier access to these internships, and provide an incentive to keep well-educated students from leaving the region.

University Collaboration

In order to meet the UNC mandate to serve the region, East Carolina University and Elizabeth City State University (our initial visioning partners) are interested in forming research and internship collaborations with NCSU at VJRCC. This would create the synergy of combined research from multiple universities, and provide students at ECU and ECSU with access to research internships

with NCSU professors. The shared university resources would save the UNC system equipment expense and research space. The center would then become a renowned multi-discipline and multi-institutional organization first with universities across the state, and later with universities across the world. Both university and private researchers will partner to develop the products of tomorrow.

Infrastructure

Building upon existing infrastructure, all components needed to support the center will be located within a 20-30-minute drive of the center.

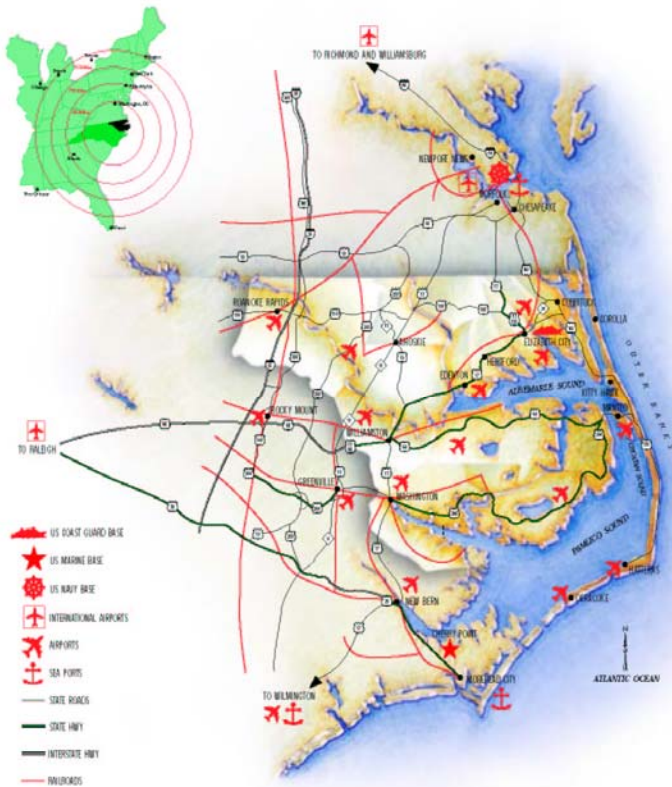
- Potential for green construction to be known as a model scientific center
- Video conferencing to become a prestigious local educational center
- Rail access provided for private commercialization partners
- Highway 64 for shipping access
- Regional airports nearby
- County water and wastewater available and expandable
- Natural gas and a T-1 communications line available
- Establish a 501(c)3 to allow the biotechnology commercialization center to stand alone.

Conclusion

As North Carolina’s population continues to growth west of I-95, the northeast region will continue to have the land and technical resources to commercialize biotech crops, functional foods, biofuels, and new biomass technology. Production, commercialization, and processing will occur within 50 miles of the fuel source. This is how we will grow new wealth and develop new jobs for the future.

Agricultural biotechnology will be an integral part of the landscape of North Carolina’s Northeast Region in the near and distant future. VJRCC must further expand its research, space and staff capacities to open the doors for the center to become the hub of agricultural biotechnology, certification and training, and a botanical extraction incubator for the region and state.

The VJRCC can become a multi-discipline and multi-institutional organization and bring in faculty and students from other nearby UNC institutions. By providing land and research space for private companies, the center will enhance its services and build jobs and investment for North Carolina’s Northeast Region allowing the region to maintain its strong agricultural heritage.



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